CHAPTER 2

Cognitive Style and Learning Strategies in Latin Instruction

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Cognitive Style in the Classroom

Classroom teachers know that all students learn differently, showing not only different levels of intelligence but also different specific talents and different tendencies to error and confusion. These inherent variations in talents, attitudes, and approaches to learning are a factor of a student's cognitive style. Cognitive style, also referred to as learning style in educational contexts, is the individual's propensity to perceive and learn in particular ways. Cognitive style is largely a factor of personality, and personality tests such as the Myers-Briggs Type Indicator (MBTI) have proved to be accurate measures of individuals' abilities and preferences in learning. For example, studies indicate that subjects classified by the MBTI as "intuitives" prefer rule-oriented learning with only enough examples to get the rules, while those identified as "sensing" prefer pattern drills and numerous examples.[1] The many other tests of personality and cognitive style developed by researchers in the past thirty years (e.g., the Gregorc Style Indicator) continue to measure and refine this connection between personality and learning.

The fact that personality plays such a crucial role in students' ability and inclination to learn is of clear importance in education. Consider the case of two students in a recent introductory Latin class. One of them, Paul, approached the material deliberately, with some anxiety: he disliked class drills that required individual answers, and would rarely speak up in exercises calling for class responses.[2] Despite his reticence, he enjoyed group work and would often work more quickly and effectively in joint projects than on his own. His assignments were usually accurate, though when he did make errors they were often structural (e.g., repeatedly misforming the imperfect tense). Sometimes he turned his assignments in late because he was unwilling or unable to rush to complete them. He was usually one of the last to complete quizzes and tests, and his performance improved when he took time to recheck his answers. Paul felt he needed to learn and apply rules, and to understand the details of a grammatical concept or a reading passage before he moved on. He responded well to pattern exercises and felt like he had accomplished something when they became clear. He disliked making errors and found it hard to accept that some level of inaccuracy and guesswork was necessary. He was not naturally attuned to fine differences in words (such as case endings), but when he understood that they were important, he made a largely successful effort to reattune himself.

In contrast, Bryan was oriented toward the reading passages and cultural notes of the textbook, and often his translations and discussions of reading passages indicated that he understood them on a personal level, if some of their cultural or grammatical subtleties escaped him. He tested quickly, rarely rechecking his work, and turned in assignments that often had careless errors. He always spoke up in class, asking questions and giving drill responses quickly, though often his initial answer would not be fully formed. Bryan was not especially interested in rules and details; he wanted to do the readings, talk about them, and move on. Since he was naturally attuned to fine details, he could often deduce rules from context and exercise examples, and did not feel a need to fully understand grammatical explanations. He learned from errors, both in class and in his homework, and was not embarrassed about being wrong.

Both Paul and Bryan were successful students, earning Bs in the course. But their cognitive styles, and thus their skills and aptitudes, were very different. Consequently the assignments and class exercises that they found most comfortable, interesting, and conducive to learning were different as well. Paul—to use terms I will shortly define—is a field-dependent operation learner, with some language anxiety, and low tolerance for ambiguity and risk-taking. Bryan, in contrast, is a field-independent comprehension learner, with high tolerance of ambiguity, little anxiety, and a positive view of risk-taking. In order for both students to work to their potential, and overcome their natural limitations, both they and I needed to be aware of their learning styles. Furthermore, the class needed to be structured in a way that allowed both students to work to their ability.

Research in modern language pedagogy has focused in part on learning-centered methods, which discuss the best ways to present language to learners as a whole (grammar-translation, audio-lingual, natural method, etc.). Other research has been more concerned with learner-centered methods, investigating the individual talents and limitations students bring to their learning process (Ellis 194–5). Studies of cognitive style fit into this category. Some central issues of cognitive style research are: In such a complex field as the organization of the mind, are there standard categories into which individuals' learning styles can be divided and studied? Is there a correlation between cognitive style and success in different topics or in different types of programs? Can students' cognitive styles be influenced by the adoption of different strategies for effective learning? How can the teacher present materials to benefit the variety of individual preferences and problems of her students? In short, how can we fulfill the goal of the Standards for Classical Language Learning to make it possible "for all students" (Gascoyne et al. 3) to be successful in learning Latin?

In this chapter, I will present (1) an overview of research into cognitive style and its implication for classroom learning, especially as it relates to Latin instruction; (2) some specific suggestions, focused on the basic tasks of vocabulary learning and intermediate reading, about how teachers can structure materials and instruction to benefit students of all learning styles; and (3) a discussion of how teaching strategies of language learning can encourage students to be more aware of their own learning processes, and consequently more effective and self-directed in their approach to learning Latin.

An Overview of Cognitive Styles

Since the cognition involved in language learning is so complex, it has been perceived and described by researchers in many different ways; table 2.1 summarizes key axes of distinction. There are, however, two global distinctions of learning styles that are consistently acknowledged, though different terminology may be used to describe them: first, comprehension/operation learning, and second, field (in)dependence.

Comprehension and Operation Learning

The terms “comprehension and operation learners” are those of G. Pask (128–48); other researchers have formulated other terms for describing this distinction.[3] Comprehension learners prefer to get a feel for an entire topic before approaching details; they learn well through stories, anecdotes, and different kinds of examples, and often look ahead and back; details fall into place last. They learn through using a language, and are often less attuned to minor errors than operation learners. In contrast, operation learners approach a topic methodically, preferring a step-by-step approach and building an overall picture of the topic from details. They tend to be more rule-oriented and more concerned about monitoring their performance for accuracy.

Field (In)dependence

Field independence is a measure of a student’s analytical inclinations and attunement to fine distinctions. The “field” at issue is not simply the language to be learned but also the circumstances of learning it: classroom, peers, teacher, materials, and so on. Field-independent learners are able to distinguish details in complex fields and tend not to be confused by changing circumstances or different perspectives; field-dependent learners are more oriented to the whole field and are more likely to be influenced by external factors such as changing contexts or the opinions of others.[4]

Other Approaches to Learning

In addition to these two global and generally agreed-upon distinctions of learning style, there is the equally global but more problematic distinction between shallow/reiterative and deep/elaborative learners. Shallow/reiterative learners focus on mechanical, surface learning; for example, learning vocabulary sequentially from a word list, memorizing paradigms. Deep/elaborative learners aim for a deeper level of comprehension and ability to use the material; for example, recognizing vocabulary through reading, noticing differences in meanings as words appear in context, recognizing the meaning implicit in case endings (Schmeck 236–8). A similar distinction can be made between active and passive learners: active learners feel more personal commitment to and control over their learning processes, and show more problem-solving ability and persistence; passive learners rely on others to explain material to them, and tend to take less initiative and personal responsibility for their work (Ellis 203–5).

To the extent that the tendency toward active or passive and shallow/reiterative or deep/elaborative approaches to learning are a factor of personality, they may be considered cognitive styles. On the other hand, there are some grounds for classifying these types of learning as phases of the learning process. Some students may be inspired by interest to adopt a more active approach to their learning, and some may respond to training in more active, and therefore more effective, learning strategies. Likewise, many students who begin with simple memorization and reiteration may eventually proceed to a more complex understanding of the material (Schmeck 236–8, 245–51). While these learning styles do reflect a deeply ingrained mindset, they may be responsive to change.

Other Axes of Distinction

In addition to these global distinctions, the literature of learning style contains a wide range of studies of other discrete elements of personality and perception as they relate to academic achievement. There is likely to be correlation between some of these characteristics: from the list that follows, for example, risk-taking behavior, impulsiveness, and tolerance of ambiguity are likely to be found in the same student, though this is not always the case.

Among factors that have been examined with particular relation to language study are the following:

1. Orientation toward risk-taking. Some students are willing to be adventurous, others are not; orientation toward risk-taking affects classroom behavior and adventurousness in language use (Ely).
2. Predilection toward impulsive or reflective choices. Some students are able to answer quickly in class situations, while others need time to reflect before answering; some students are willing to make mistakes and are attuned to learning from them, while others prefer to spend enough time preparing that they make very few mistakes (Claxton and Murrell 16–7).
3. Visual/aural/tactile perceptual style. Some students are visually oriented, learning well from the written word and especially from visual stimuli to reinforce meaning; others are more aurally oriented and are better able to learn and create language well in an aural/oral context;[5] still others respond best to material/tactile/kinesthetic stimuli (Dunn and Dunn 13–5)
4. Tolerance of ambiguity. Some students are able to continue to look for meaning even when they do not understand everything they hear or see; others are disconcerted by ambiguity and do not get much from exposure to overly challenging material (Birckbichler and Omaggio 342–3, 346–7).

5. Anxiety. Some students are given a competitive edge by a small amount of anxiety, while others experience it as debilitating or inhibiting (Gregersen; Horwitz and Young; Young).

6. Orientation toward external or internal measures of success. Some students are essentially grade oriented, while others want to make sure that they understand a topic to their satisfaction. Each type of student will appreciate or dislike different elements of course work.[6]

7. Structure. Some students work well in a highly structured classroom environment, with specific and clearly outlined tasks; other prefer less structure and more individual choice in, for example, their approach to readings or the format of group work (Hunt).

8. Orientation to authority. Some students learn better in classrooms where the teacher's authority and direction is emphasized, while others work better in an open classroom in which group work and learning from peers is encouraged. This element of learning style, as indeed many others, may be culturally influenced: a study of Chinese and Mexican school children learning English as a second language showed that the Chinese children learned better in a teacher-centered classroom, while the Mexican children learned better in a peer-centered classroom.[7]

Cognitive Style and the Ability to Learn

All of this research on learning style in language instruction has left us with a great deal of often contradictory information, but a few points are generally agreed upon.

First: in any measure of learning style, gradations along the scale, rather than completely opposite types, are the norm. Very rarely will a student be entirely operational or comprehensive in her or his approach to tasks. Furthermore, different subjects, teaching methods, or types of task will often evoke different approaches from the same student. Learning styles are tendencies rather than absolutes.

Second: all learning styles are or can be effective and lead to mature comprehension of a subject. There have been a great many studies aimed at correlating one factor or another with greater success in language learning. Risk-taking behavior, for example, has been positively correlated with achievement in some studies, but other studies suggest that reflection leads to better achievement in language learning. One researcher's "risk-taking" may be another's "impulsiveness."[8] Field independence has been most convincingly linked with success in language learning, but even here the correlation is not strong.[9] The difficulty with correlation studies is that the number of factors involved prevents most conclusions from being definitive. Variables such as the requirements of the class, the researcher's interpretation of what constitutes, for example, risk-taking, the details of the experiment, and so on, make correlations hard to prove, and explain the often contradictory results of such studies. Many other measures of learning style, for example, comprehension/

Table 2.1 Axes of Distinction of Cognitive Style

Cognitive Styles	Significance
Comprehension/operation learning	Comprehension learners prefer to get a feel for the whole topic before approaching details; operation learners prefer to apply rules and build an overall picture of the topic from details.
Field dependence/ field independence	Field-dependent students are less oriented toward specific details and more likely to be influenced by external factors (classroom situations; opinions of others) than field-independent students.
Shallow-reiterative vs. deep/ elaborative learners	Shallow/reiterative learners focus on mechanical, surface learning; deep/elaborative learners aim for a more complete comprehension of the material.
Active vs. passive learners	Active learners feel more control over their learning processes; passive learners learn more receptively.
Risk-averse vs. risk-taking learners	Risk-takers enjoy experimenting and guessing; risk-averse students are unwilling to answer or guess when they feel they do not fully understand the material.
Impulsive vs. reflective	Some students are inclined to impulsive choices, often learning effectively from their errors; others prefer to reflect and work until they are confident in their answers.
Visual vs. aural vs. tactile style	Different students respond better to visual/written, oral/aural, or material/tactile information.
Tolerant vs. intolerant of ambiguity	Some students are comfortable looking for meaning in material they do not fully understand; others are put off by ambiguity and prefer material they can fully control.
Responses to anxiety	Some students respond well to the anxiety of classroom situations (such as drills); others experience their anxiety as inhibiting.
Internal vs. external measures of success	Some students are more oriented toward simply getting the grade; others are more focused on their relationship to the topic studied.
Preference for structured vs. unstructured study	Some students respond well to structured settings (e.g. specific class time allotted for activities requiring specific answers); others prefer more flexibility and choice of activities in the classroom situation.
Authority oriented vs. peer oriented	Some students learn better in classrooms where the teacher overtly provides all information and direction; others are more peer oriented and prefer group work and communication with peers.

These axes of distinction detail some important variations in students' cognitive styles .Most students fall somewhere along the axis rather than clearly at one extreme or the other.

operation learning or visual/aural orientation, cannot be linked to more or less success. In short, it appears that learners of any cognitive orientation are capable of success in language learning.

Third: all cognitive styles have their pathologies as well. The approach a learner naturally uses sometimes proves ineffective and leads to typical kinds of errors. Pask, in his discussion of comprehension and operation learning, defines the characteristic error of comprehension learners as "globetrotting," which involves jumping to unjustified conclusions and overgeneralizing. "Improvidence," the pathology of operation learning, is the failure to grasp the "big picture," to allow major points to be obscured by details (Pask; Schmeck 236). Students, therefore, will tend to particular kinds of errors as well as to particular kinds of effective learning strategies.

Fourth: Good students are able to adapt. An academically talented comprehension learner can achieve well in an operationally designed course, and vice versa. Other students, less supported by intelligence, motivation, or academic preparation, may become mired in the characteristic errors of their cognitive style.

Fifth: The teacher's cognitive style can play a part in how students learn and how they are evaluated. For example, teachers who believe that quick responses are the only measure of how well the material has been learned tend not to be sympathetic to the needs of students who require time to reflect. Teachers who value detail will be less inclined to sympathize with the experimental errors of the comprehension learner. Studies have indicated that teachers tend to rate students who share their learning style as better than students who do not (Claxton and Murrell 10). In order to be fair, teachers will need to be aware of their own cognitive orientations as well as of the needs of their students (Cooper).

Cognitive Style and Latin Instruction

Traditional Latin instruction, emphasizing a strong orientation to grammar and meticulous attention to detail, favors a particular kind of student: one who learns well sequentially, is field independent (i.e. sensitized to subtle differences such as case endings), puts high value on memory work and rules, prefers abstractions to concrete realities, and prefers to study alone. Students who measure high in the "introverted," "sensing," "thinking," and "judging" scales of the MBTI, "abstract sequentials" in the Gregorc scale,[10] and who are operation learners are well suited to study according to the grammar-translation method. But such students are a minority of those we are likely to get in our classrooms today: as few as 10 percent (Moody 392–3). Many talented students are extroverted and like learning through peer-group experience, prefer to work globally and later define fine points of meaning, enjoy aural communication and risk-taking (in the form of classroom drills), and learn from mistakes (as opposed to reflecting enough to avoid making them); other bright students may be field dependent and not automatically inclined to recognize such important factors as case-endings as crucial. For these students, something about their Latin class will seem unpleasant, burdensome, and wrong.

The brightest students with these learning styles will be able to adapt to the needs of a traditional course, but others will become bored and not want to continue, or become alienated from a language they may have initially been interested in learning, describing it as "too hard" or "useless." This situation must be remedied if Latin is to be taught effectively, and, bluntly, if it is going to continue to be a viable language in today's schools and universities .

Learner-Centered Approaches to Latin Teaching

Variety

In order to be comfortable and effective in the Latin classroom, all students need (1) to be presented with material in a form that they can readily and naturally understand at least some of the time; and (2) to be challenged by tasks that are at variance with their natural approach to the learning, and that combat their characteristic errors. We must therefore restructure teaching methods and materials so that they are more flexible and diverse. For example, students who learn well from concrete examples or from visual input should have text illustrations to reinforce vocabulary or suggest the topics of reading passages, and classwork that focuses on identifying or describing things or items in the real world. Students attuned to aural language need reading aloud and oral answers to help them learn and to maintain their interest and sense of rightness in the learning process. Field-dependent students, who tend to be peer-oriented, benefit from group-learning exercises. Operation learners should have clearly stated rules and some analytical exercises in applying them, but other learners, not as attuned to rules and analysis, need patterned responses to build their sensitivity to important elements of grammar.

Providing a variety of approaches to language facilitates the student's natural tendency to find his or her way into the material according to his or her learning style. A textbook designed to meet the needs of different students (as are many modern language textbooks) will contain visuals, reading passages, grammar explanations, and many kinds of exercises so that students of all styles will find something helpful. Operation learners may prefer to learn the rules, do the exercises, and then approach the reading, while comprehension learners may puzzle awhile over the reading and visuals, look at the grammar rules and vocabulary, do a few exercises, and return to the reading. Classwork can be designed to include, for example, visual and aural input, rule explanation and pattern drill, inductive and deductive approaches to relating grammar and reading.

A more varied approach to language instruction has the additional advantage of combating the characteristic errors each student is prone to. What comes naturally for some students challenges others and forces them into different learning strategies. The form-finding and distinguishing exercises that are comfortable for most field-independent learners are difficult but necessary for field-dependent learners, who might be overlooking important details. Exercises in reading for information or writing descriptions or stories would be pleasing to comprehension learners and students oriented toward risk-taking but are a necessary trial for operation learners, who might otherwise get bogged down in details.

And finally, variety is intrinsically more pleasant for all students. Gregorc (1984: 54) comments that even “despite strong preferences [in instructional methods], most individuals . . . indicated a desire for a variety of approaches in order to avoid boredom.” A student whose interest is maintained is more inclined to move to active and deep-elaborative approaches to learning.

Until Latin textbooks are structured to accommodate learner-centered instruction, the teacher must be primarily responsible for making sure the class has a variety of approaches to material that the text may present in a rather monotone fashion. In order to help all students learn effectively, she or he must be aware first of the typical mindsets of students of various cognitive styles, including the characteristic errors to which they are prone. Then, the teacher must be willing to develop and maintain creative and varied approaches to new material.

Presentation for Different Cognitive Styles: Vocabulary

Most students’ initial approach to vocabulary learning is shallow-reiterative: they learn to define *facio* as “do or make” on the vocabulary quiz. But this is a small part of really knowing what the word means and being able to read it. Students must learn to think in terms of each word’s *Latin* semantic field, as opposed to its English equivalents. They must also be able to recognize tense, person, mood, and so on, and realize the meaning of the word in context. This is a complex task that requires, in addition to memorization, the ability to distinguish between fine points, tolerance of ambiguity, and the ability to integrate the memorized material with the demands of different contexts.

This level of deeper processing can be approached in different ways. Good students of any cognitive style will eventually be able to “read” the word, though some may lean to making a clear choice between meanings and others may be content with a more intuitive understanding of the passage containing the word. (The second approach is favored in modern languages, in which students are encouraged to think and read in the target language, while Latin instruction generally favors the precision of translation.) Some students will not realize appropriate meanings—operation learners through rigidity (“I thought it meant ‘do’”), comprehension learners through failure to recognize the importance of tense and person markers; students of both types need the task made overt in order to learn strategies for overcoming their limitations.

Both the initial presentation of words for memorization and the exercises oriented toward word use in context can be presented in ways that feel natural or challenging to students of all learning styles. The approaches outlined here are more representative than exhaustive, but they do present a variety of approaches that will benefit students of different cognitive styles.

- *Inductive versus deductive approaches to lists and readings.* Textbooks almost invariably present both reading and vocabulary sections in every unit. In general, comprehension learners will prefer to start with the readings and flip back to the vocabulary when necessary, while operation learners will prefer to learn the vocabulary before approaching the readings. By varying the order of class presentation, the teacher can alternately please and challenge learners of both types. Some chapters may present readings first, so that new words must be guessed at from context. (Books that provide visuals or background information make vocabulary guessing easier and less disconcerting for students with a low tolerance for ambiguity.) Other chapters can be read after study of the vocabulary, with attention to finding the new words in the reading later.

- Repetition aloud. In addition to having students simply repeat vocabulary items, the teacher may add a memory exercise by having students repeat several words at a time, with each student leaving out an old word and adding a new one; this includes the dimension of group cooperation for peer-oriented students. The teacher may say the words aloud with the book closed, have the students repeat them and write them down, then compare with the actual spelling of the word, to integrate aural/visual skills for students of all orientations.
- Visual connectedness. Words can be presented visually for more visual learners: for example, illustrations of material things (canis, puer) or simple concepts (ambulare, currere). Illustrations may be present in the textbook, or the teacher may present them from her own resources, or assign students to prepare visual representations, which can be used in their own and in subsequent classes. Situational illustrations allow connection of several concepts: for example, a picture of a man working in the field allows the basic ideas of vir, ager, caelum, arbor, laborat, and so on, to be associated with visual images—and with each other—in a logically connected semantic field. In addition to helping visual learners, this sort of conceptualization is helpful for field-dependent and comprehension learners who look for the whole picture in preference to categorizations such as “nouns: vir, ager; verbs: laboro.”
- Presentation of words through objects/actions. Class exercises in which students either point out or act out the meanings of words are good for field-dependent, visual, and tactile learners and for risk-takers who want to guess and respond to the physical world, for example, hic est liber, hic est ianua, nunc sedet, nunc surgit; commands such as ambula, surge, scribe in tabulam, and so on. These exercises are generally straightforward, so are good for students who are “concrete” as opposed to “abstract” thinkers; they can be perceived as both teacher-oriented and peer-oriented (see Strasheim for further examples).
- Games. Students connect Latin words with pictures or English definitions, such as vocabulary bingo. These are enjoyable to most students, especially peer-oriented risk-takers; analytic types may find games frivolous but benefit from having to think quickly and make guesses.

- Mnemonics: cognates. Although the goal of vocabulary learning is for the Latin word to automatically carry an appropriate meaning in the student's mind, this state is usually not immediately achieved. Students often benefit from using mnemonic tricks as an initial approach to learning the word. Students may remember Latin words from English cognates, for example, ager from agriculture, canis from canine, curro from (a bit more of a stretch) current, racecourse, or cursor. Guessing from cognates can become a highly effective reading strategy (Holmes and Ramos), so some conscious attention to the relationship between English cognates and Latin words will help give the student practice and flexibility in using cognates to read. Cognates allow comprehension learners to form a global appreciation of Latin-English relations that may help them with specifics later; operation learners may form a more analytical appreciation of a word's semantic range.

- Mnemonics: imaging. Some students respond well to processing words elaboratively, that is, by relating them to elements of their own lives or to material reality. Such students benefit from being encouraged to visualize actions, material things, and situations, while saying or reading words, thus consciously developing the automatic recognition of meaning from Latin words. A related imaging technique is the keyword method, which research has shown to be very effective in boosting vocabulary recall (Kasper). In this technique, students form an image association of a Latin word and an English word that sounds similar: for example, ianua may be paired with January in the image of closing a door against winter cold.

- Reading for new words. Students read a passage specifically looking for new words or for words on a particular subject, such as food, travel, time expressions; they are asked to take note of changes in form and use. Easy for field-independent students and comprehension learners who work well with whole texts; challenges field-dependent students who tend to overlook details.

- Word choices. Students choose a word from two or three to complete a sentence or phrase, or match a picture; this may be presented as a homework exercise or a class drill. Good for operation learners and field-independent students, who tend to be more aware of specific meanings. The exercise can be presented so that more than one answer is correct, and students respond with their preferences; the social issues involved with personal preferences make the exercise more appealing to field-dependent learners, who tend to be more peer-oriented and are inclined to give language social meaning even when unsure of specifics of form.

- Word distinctions. Students choose from similar words to complete a sentence, for example, puellae in ______ stant. (a) viro (b) via (c) vita (d) valde. Easy for operation and field-independent learners, who will have learned forms well; harder for comprehension learners, who may have overrelied on contextual clues to read passages, and for field-dependent students who are not attuned to fine distinctions.

- Eliminating unnecessary words. Students eliminate an out-of-place word in a sentence, for example, puellae in via arbore stant et amicos vocant.[11] Different students will approach this exercise globally, forming quick opinions about out-of-place elements, or analytically, translating word for word and making careful choices. Class drill and group presentation will force different processes, as students are stressed by time constraints, or observe the strategies of other students in a group.
- Semantic mapping. Students brainstorm for all the words they can think of relating to a semantic field (e.g., exercitus), then categorize these words: for example, dux, centurio, miles (personnel); equus, arma, gladius (equipment), oppugnare, proelium, (actions/events) and so on; the exercise may include peripheral vocabulary and ideas associated with what the exercitus is and does (oppidum, where the battle happens; tristis, feelings associated with warfare, etc.) (Hague). As a cooperative effort, this is good for group-oriented and field-dependent students; the listing of many elements suits comprehension learners while the categorization suits operation learners. A further step in semantic mapping, clarifying distinctions between words and ranges of meanings of individual words (e.g., between dux, imperator, centurio) is also good for operation learners and analytic types, and encourages students who are inclined to rely on context and guessing to use these skills for an analytic purpose.

In all of these exercises, some students will find the required process easy and natural, while others will be forced to work against their natural inclinations; as usual, varying the exercises used in any one class or study unit satisfies the needs of different students. In addition, while I have suggested what sorts of students benefit from each exercise, other variables may come into play: for example, whether an exercise is presented in class or as homework, or with or without a strict time limit; whether it is a group or individual exercise; what value is put on correctness as opposed to creative exploration. It is important for the teacher to ensure that different exercises encourage and reward students of each cognitive orientation. Table 2.2 offers a sampling of activities to challenge students with different learning styles. For further vocabulary activities, see Gruber-Miller, Gairns and Redman, Holden, and Nation.

Diagnosing Learning Style

First, awareness of learning styles allows teachers to recognize characteristic errors of different types of learners and help students toward deeper processing of the language. Consider, for example, a bright student who learns quickly, but makes impulsive choices. When she reads she is tolerant of ambiguity, able to remember passages as she reads them, but prone to making impulsive errors, such as always

Table 2.2 Classroom Exercises for Vocabulary Learning and Use

Activity	Benefits
Repeating words aloud after the teacher; reading words aloud from the vocabulary list in the book	Helps aurally oriented students; operational learners who like the structure of the word list
Learning words through visual clues (*hic est liber*, *hic est ianua*, *nunc sedet*, *nunc surgit*)	Helps visual learners, field-dependent learners, risk-takers who want to guess and respond to the visual world
Reading text to find new vocabulary; noticing changes in form and use	Easy for field-independent students and comprehension learners who work well with whole texts; challenges field-dependent students who overlook details
Class drills in which students choose (from 2 or 3) a word to complete a sentence or phrase, or match a picture	Easy for comprehension learners and students who enjoy experimenting with new knowledge; challenging to operational learners who may want to feel they have learned words more thoroughly before using them
Students use new words in a simple sentence; group exercise or homework	Requires both creativity and knowledge of specific grammar, so all types will find different challenges; peer-oriented students and risk-takers will prefer the group exercise; those who prefer to reflect and prepare without risking error will prefer the homework
Games such as vocabulary bingo in which students connect the Latin word with a picture or English definition	Enjoyable to most students; analytic types may find it frivolous but benefit from having to think quickly

Level: Elementary. Not all of the exercises here can or should be used with every new vocabulary lesson, but by varying the approach to vocabulary learning and use, each student will find some exercises that are especially comfortable and some that are challenging.

Also note that the *content* of the exercise is one issue: field-independent or operational learners, for example, will prefer analytical exercises in applying rules and analyzing data, while comprehension learners will be more oriented toward text and reading. The *presentation* of exercises is another issue: similar activities can be presented as class drills, homework exercises, or group activities, appealing to different types of student.

taking an -a ending on a noun as a feminine singular nominative, rather than the neuter plural accusative it may be. It may not be that the passage is especially difficult, or that she is unaware of the right endings—she may know them well enough to give correct form on a grammar test—but her impulsive reading leads to increasing misunderstanding, which she probably tries to remedy by more guessing. She is not experiencing a failure of intelligence, but a strategy that has served her well in the past—making quick choices and guessing from context—has begun to cause her problems. It is a good strategy, but she needs a teacher who recognizes her difficulty and is able to help her work past it.

Another student, one who proceeds logically and with discrimination, may still encounter problems: unknown words are disconcerting and need to be looked up, ambivalent endings must be puzzled over until they make sense; reading becomes a slow process, and he may forget contextual information that would help him in the long run. Where idioms and ungrammatical or unfamiliar structures appear, the student is reluctant or unable to guess at their meaning. He has and uses knowledge and analytical ability, but his innate strategies work only to a point.

A naive analysis of these students would probably say that the first one needs to work on her grammar and the second one needs to learn to read more quickly, and of course these analyses are correct as far as they go. But to really help these students, the teacher needs to be aware of their differing learning styles and able to prescribe exercises to develop their strengths and overcome their weaknesses. For both students, the traditional approach of translating a passage word for word, then explicating the grammar, is frustrating: for the first one, because she becomes confused and the passage stops making sense, and for the second, because reading takes so long that meaning falls by the wayside and unresolved problems dominate his attention.[12]

Second, understanding a student's learning style—and the talents and errors associated with it—allow the teacher to prescribe exercises to combat each student's weak points. For example, the student who focuses too much on detail might benefit from prereading exercises that would focus on reading for specific information, (e.g., "Find the passage that means . . ." "Find the major characters in this passage and how they are related to one another"), because such tasks encourage a global approach and using limited information to reach conclusions—for this student, an underdeveloped skill. The student who jumps to conclusions might benefit from a grammar-oriented prereading exercise, such as one in which passive and deponent verbs are distinguished from one another, or where examples of participles, genitives, or some other grammatical element are marked and reviewed with emphasis on their importance to meaning in the passage. Table 2.3 outlines some approaches to reading that encourage students of different learning styles toward a more complete appreciation of the text.

Third, diagnosing student needs is often an unconscious process for teachers, but there are tools that enable the teacher to diagnose her or his students according to their classroom performance. For example, a diagnostic inventory designed by Alice C. Omaggio has the teacher rank the student's characteristic behavior along a 1–5 scale on such issues as "tend[s] to answer questions impulsively, giving quick but often inaccurate answers"; "write[s] lengthy compositions riddled with errors"; and "get[s] easily distracted by irrelevant words and structures" (Omaggio 12). Although this diagnostic inventory does not label a student's cognitive style, it does paint a picture of the student's strengths and weaknesses and allows the teacher to determine what exercises or attitudes would help this student learn most effectively.

Finally, another approach to diagnosing and working with student learning styles is to involve the student in the process, making her aware of her own strengths and preferences, where she might expect to encounter problems, and how to deal with differences of style between herself and her teachers. Many campus tutor-

Table 2.3 Classroom Exercises for Reading

Activity	Benefits
Prereading for grammar, e.g., verb tenses, new vocabulary, new grammar, case usage, etc.	Field-independent and operational learners excel; field-dependent students benefit from the attention to detail.
Prereading for information (skim/scan the text), e.g., identifying characters and relationships, locations, specific content questions; time limit applied for some class work	Comprehension learners excel; prereading challenges operation learners who prefer sequential work; time limit encourages guessing for those reluctant to guess.
Class reading of text with new or blanked-out words; students use context to deduce possible meanings	Comprehension and field-dependent students excel; class reading helps operation learners and students who dislike ambiguity, so are slowed or stumped by vocabulary problems.
Discussion of texts without translating; students are encouraged to raise questions about content or grammar	Comprehension learners excel; operation learners may translate the text anyway, but benefit from the focus on text as primarily conveying meaning.
Group work in prereading exercises above or in translation	Depending on the exercise, different types of students will excel; all students may observe others' strategies.
Reading for strategy awareness: instructor focuses student attention on reading habits: content awareness, sensitivity to grammar and details; what is easy and what is discouraging; response to unknown words; rereading; etc.	This activity is helpful for students of all types; it is most helpful for motivated students who act to correct their "faults"; it also helps for struggling students who may find the best way to approach material that they were discouraged by before.[a]

Level: Intermediate. Not all of the exercises here can or should be used with every text; variation allows different levels of challenge for all students.

Also differences in ability and commitment to language learning are distinct from cognitive style; good students will probably do well even in exercises counter to their preferred approaches, while less committed or talented students may have problems even in exercises that cater to their natural talents.

[a] Barnett (1989) has a short questionnaire to help students and teachers detect what particular reading strategies they use when they read a foreign language that can be adapted to Latin. For additional reading activities, see chapters 6 and 7, this volume; Barnett (1989), Gruber-Miller, and Phillips.

ing, learning enhancement, and student development centers provide testing and analysis of cognitive style for students who are considered at risk, since making students aware of their cognitive style is of proven effectiveness in helping their overall performance (Claxton and Murrell 61–2). While some testing instruments are complex and require detailed analysis, others, such as the Gregorc Style Delineator, can be administered in about twenty minutes in or out of class to provide the student with basic insights about her preferred learning methods.

Of the testing instruments available, some are abbreviated, learning-oriented versions of the MBTI, and are therefore able to make use of the substantial research coordinating the MBTI with learning preferences and performance. The TLC Learning Style Inventory, for example, has students agree or disagree with statements such as “Most of what I know, I learned on my own” and “I like to study for tests with other students”; the answers rank the students along three of the four Myers/Briggs axes (Silver, Eikenberry, and Hanson). Even more simple is the test published in a recent college introductory manual (Gardner and Jewler 53–64), where the student chooses between twenty opposite preferences, for example: “making decisions after finding out what others think / making decisions without consulting others” and “helping others explore their feelings / helping others make logical decisions.” The answers place the student in the MBTI scales; discussion follows of preferred learning methods, how to enhance learning methods that are less natural, and how to work with teachers and students whose learning styles are different.

Other instruments are more oriented toward specifics of study habits and classroom preferences; for example, the Canfield Learning Styles Inventory (Canfield), which asks students how they respond to various types of assignment, assessments, and value as instructional tools; or the Grasha-Riechmann Student Learning Styles Questionnaire (Grasha), which has students answer questions that place them along the gradations “competitive /collaborative,” “participant/avoidant,” and “dependent/independent,” with learning techniques associated with each category. The abundant recent work in the classification of learning styles and strategies means that there is no “coherent, well accepted system for describing these strategies” (Oxford; see also Hsiao and Oxford). In a classroom setting, however, the teacher’s continuing observation of and interaction with the student is ultimately more valuable than any one testing instrument (see Cohen).

Whatever diagnostic method is used, it appears that students who are aware of their cognitive styles and learning preferences can make use of the learning techniques that help them process information most effectively (e.g., elaborative approaches to vocabulary vs. analytical ones); they also benefit from understanding what faults they are likely to slip into and what they can do to avoid them. The same awareness that enables the teacher to give her class effective guidance also enables the students consciously to use their natural strengths and benefit from work that is less immediately pleasing. By gaining a little self-knowledge, they are able to become more effective participants in their own learning process.

Learning Strategies

The second section of this chapter dealt with some of the ways in which a teacher can present material in ways more sensitive to the needs of different learners. This section explores the notion of learning strategies: methods by which students can be taught to monitor and direct their own learning process.

Every student naturally uses strategies in order to determine meanings in language. A strategy is, essentially, any method a student uses in attempting to come to terms with new skills and knowledge. This includes processes such as guessing word meanings from cognates, rereading difficult passages, looking for small distinctions between words, and trying to remember the context of a reading exercise. Strategies are closely related to cognitive style; in fact, some researchers define learning style as a propensity to use some strategies in preference to others (Schmeck 233–4).

Some strategies, of course, are more effective than others. The student whose strategy is to become discouraged and stop reading is clearly not going to be as successful as the student who persists through whatever method. Where the natural attempts of each student to find the best way to learn break down into characteristic errors, teachers may help the student compensate by instructing him in how to use different strategies; that is, by overtly teaching a method for confronting problems and giving the student responsibility for using it.

Researchers speak of two different types of learning strategies: cognitive, and metacognitive. Metacognitive strategies are those that “involve planning and directing learning at a general level” (Cook 127). Planning one’s own approach to a chapter and choosing study methods that are effective in dealing with one’s own specific problems, for example, are metacognitive strategies. In many strategy-oriented instructional programs, the student is taught self-monitoring; that is, to be conscious of her own way of approaching tasks, so that she can become more precisely aware of when she encounters difficulty, how the difficulty might have arisen, and what steps she can take to solve it.[13] Since metacognitive behaviors “involve an awareness of the self as learner” (Galloway and Labarca 145) they are consequently vital to the student’s sense of empowerment over her learning—but they must be supported by more specific cognitive strategies.

Cognitive strategies “involve specific conscious ways of tackling learning” (Cook 127). Cognitive strategies may be understood in broad terms, referring to general processes. For example, J. Rubin identifies six general cognitive strategies: (1) clarification/verification (confirming rules and knowledge about the target language); (2) guessing/inferencing (using hunches from many sources to infer meaning); (3) deductive reasoning (looking for and applying general rules); (4) practice (repetition, rehearsal, etc.); (5) memorization (organizing the “storage and retrieval process”); and (6) monitoring (noticing errors and processes; this may be considered a metacognitive process or a combination of cognitive and metacognitive processes) (Rubin 23–5).

Cognitive strategies may also be seen more specifically, including such activities as note-taking, translation, elaboration, visual imagining, and so on (Prokop 17), cognate guessing, risk-taking, brainstorming, learning to understand the gist of a passage, and so on (Campbell and Ortiz 165–7). Effective strategies arise naturally from all cognitive styles. From Rubin’s general list, for example, verification and practice might be more appealing to operation learners, while guessing/inferencing is more natural for comprehension learners.

To metacognitive and cognitive strategies may be added social-affective strategies for learning: the ways students find to motivate and reward themselves, relieve anxiety, and generate energy, especially as they relate to the social milieu of the classroom (Galloway and Labarca 147).

When the teacher instructs students in specific strategies, students will learn some that seem natural to them, or be confirmed in the effectiveness of their natural ways of approaching new material; they will also learn how to proceed when their standard paths are not producing good results. For example, Campbell and Ortiz, as part of an anxiety-lessening workshop, present a list of strategies that helps students identify some goals and processes they may not have been aware of before (e.g., differentiating formal and informal expressions, using circumlocution to express ideas, developing a feeling for the gist when the entirety is incomprehensible); while at the same time instructing them on some effective ways to accomplish the more general goal of attaining language fluency. By teaching students that risk-taking, context guessing, brainstorming, paraphrasing, solving problems in groups, and so on, are proven effective means of achieving language proficiency, Campbell and Ortiz (157–68) are able to focus their students' attention on *techniques* and away from anxiety and feelings of helplessness—and away from the sense of the language as something inflexible and unattainable.

Strategy use is most effective when the processes are overt: when students are aware that they are choosing and using strategies. Other important factors are that students should understand thoroughly how to use a strategy, and experience some benefits from using it (MacIntyre). Students who use a particular strategy give a variety of reasons for doing so: it helps them learn more quickly or effectively, focus attention better, or plan a task; it helps organize ideas or accomplish specific tasks; it makes learning easier or more fun or more natural. Conversely, students describe strategies they abandon as ineffective, confusing, boring, or incompatible with their preferred way of learning (Chamot 312–9). While good teaching of strategies makes a difference in how effectively students can use them, it is natural for some students to abandon some strategies and prefer others; this is part of the individual processes by which they seek mastery of the language.

When teachers teach through strategies, they are on the road to creating more autonomous learners. Strategy instruction encourages the student to become aware of the processes through which he learns language, and to guide his own learning. The teacher becomes a facilitator in the student's learning process, first explaining and illustrating what to learn, then providing coaching and feedback, and finally monitoring the student's independent use of the strategies that are most effective for each individual (O'Malley and Chamot 116–9).

Likewise, students who both develop an understanding of their own cognitive styles and learn to use strategies effectively can gain a feeling of empowerment over their learning processes, even with difficult material. Finding that one's approach to problem solving is shared by other effective learners is an encouragement and a confirmation of the rightness of one's ways of thought. Strategies also allow the student to achieve a little distance from issues that may cloud the language learning process: issues such as anxiety or feelings of inadequacy, or the perception that the material is distant, hard, or unapproachable by ordinary means. Recognizing the variety of possible approaches, and where one is naturally adept, is encouraging. Strategy instruction also allows students to focus on discrete ideas—what tasks are they accomplishing effectively, and what needs work? What are the right tools for them to use to learn what they are committed to learn this semester?[14] The task of learning Latin, rather than looming as a huge, externally imposed, frequently confusing task, takes on a milder aspect. By focusing on the tools as well as the task, the task becomes more attainable.

Conclusion

The single-style approach to Latin still so commonly in use has the negative effect of discouraging students with noncompatible learning styles from pursuing an initial interest in the language. This is a problem for the profession, which, like many traditional academic fields, must do what it can to maintain the interest of students in today's universities, where business, computer, and communications programs compete for enrollment.

There are further problems with the traditional approach. It tends to encourage operation learning pathologies, such as memorization of endings without connecting the endings to meaning, or failure to integrate learned vocabulary with reading (as witnessed by the common phenomenon of English written over words in reading passages), and literal translations that make no sense. Students who are forced into working in a mode at odds with their natural tendencies are especially vulnerable to the pathologies of that mode.[15] Traditional Latin instruction also does not develop some generally nonoperational learning strategies, such as tolerance of ambiguity and ability to guess, that are crucial in learning to read. The operational focus does more than alienate those with incompatible learning styles, it hinders anyone from fully developing the skills that would help her to become fluent in the language, with the result that fluency in reading and speaking Latin are becoming increasingly rare.

In order to help students of all cognitive styles come to some appreciation of the classical languages, we must restructure our teaching materials and teaching styles to help students find comfortable and meaningful paths to their own manner of comprehension. We will have to move away from a model of language teaching as information transfer, and adopt an approach that teaches the processes by which language may be understood. Each text, and each teacher, may set different tasks to a class as a means of teaching Latin, but all teaching has the ultimate goal of moving students from their initial, surface learning to a real comprehension of the material. By developing an awareness of different learning styles, and by presenting information in a variety of ways, teachers can help students learn to move beyond the shallow/reiterative stage in ways that correspond with their natural inclinations in perceiving. By meeting student needs, we have a chance to foster a new generation of learners with an interest in the classical world and a stake in the survival of the classics.

Notes

1. Moody 390–1, 397–9. The MBTI measures personality along four scales: introversion/extraversion, sensing/intuition, thinking/feeling, and judging/perceiving, for a total of sixteen personality "types," with, of course, gradations along each scale. Each scale suggests a range of differences in cognitive style, so that the entire profile of any individual's approach to learning is quite complex (Myers and McCaulley). There are a number of other such personality measures used in education. While the MBTI is the most sensitive instrument, one of the easiest to use is the Gregorc Style Delineator (GSD), designed specifically to measure learning preferences. From a brief series of personality-based questions, this test determines four types of learners along two scales: abstract (preferring symbols and ideas) / concrete (preferring experience and examples), and sequential (preferring orderly, step-by-step learning) / random (preferring holistic approaches and progress through intuitive leaps) (Gregorc 1984, 1985). For a discussion of these and other personality-based approaches to learning style, see Claxton and Murrell 13–21.

2. Students' names have been changed.

3. For example, "intuitives/analysts" (Allinson and Hayes), "lumpers" and "splitters," (Claxton and Murrell 21–37), "experiential/studial learners" (Ellis 202–3), or "holist/serialist learners" (Prokop 9). There are correlations with Gregorc's "random" and "sequential" styles and with the MBTI sensing/feeling and judging/perceiving scales (Claxton and Murrell 21–37; Schmeck 235–8).

4. On field (in)dependence in general, see Claxton and Murrell 8–13; in language learning, Cook 137–8; Prokop 6–12; Skehan 111–5. See now also Ehrman and Leaver for a reorganization of cognitive styles such as random/sequential, abstract/concrete, and field-(in)dependent/field-sensitive styles.

5. See, e.g., the Cognitive Style Inventory Profile in Flippo and Terrell 315–7.

6. This is one example of a social interaction model of cognitive style; orientation to authority is another; other studies have discussed other attitudes that are specifically relevant in classroom and other interactions in the university setting. See Claxton and Murrell 37–46; Skehan 50–72, 129–35.

7. A study by L. Wong-Fillmore, discussed in Skehan 132–4.

8. For a positive correlation of risk with achievement: McGroarty and Oxford 66.

9. Elaine Fuller Carter tested the proposition that field-dependent students would do better in a communication-oriented language course, while field-independent students would do better in a more traditional grammar-based course; she found that field-independent students performed slightly better in both types of courses. For a different view of the role of field (in)dependence, see Abraham; Skehan 111–5.

10. See note 1.

11. Omaggio presents the "word distinctions" and "eliminating unnecessary words" exercises as part of a program designed to test students for characteristic errors and assign exercises specifically to remedy them (17–29).

12. For practical techniques designed to circumvent characteristic errors, see Birckbichler and Omaggio 336–45.

13. Encouraging students' metacognitive awareness has proved effective in helping students overcome their characteristic problems in second language acquisition; see, e.g., Barnett 1988: 150–62; Carrell 122–34; McGroarty and Oxford; Oxford and Crookall 404–19. Making students aware of their cognitive styles and the learning processes they tend to employ is a commonly used technique for helping academically disadvantaged students monitor

their learning processes; my own university uses the GSD. For an overview of such general applications, see Claxton and Murrell 57–64.

14. Awareness of their own preferred strategies is also likely to be helpful to students as they make use of the hypermedia tools for learning Latin that are increasingly incorporated into language instruction. Without this awareness, some students (field dependents in particular) may be unable to choose the most effective resources for their own needs. Further, in designing and assigning hypermedia materials, it is vital for educators to be aware of students' cognitive styles both for individual exercises and in a program's overall design (Daniels and Moore).

15. In other words, students realize that they must find some way to accomplish tasks that do not come naturally, but some do not have the ability to find a productive strategy on their own. Therefore, even a field-dependent comprehension learner might fall into patterns of rigid memorization and inflexible definition that might typically be expected from a student more oriented toward operation learning.

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